

## **CLAIMS**

**1. (Currently Amended)** A computer storage medium for facilitating resolution of partially unresolved input, the medium having computer executable instructions, which when executed by a computer perform operations comprising:

parsing a sequence of object-based commands into individual object-based commands;

wherein the sequence of object-based commands comprise a command string and the individual object-based commands comprise respective constituent parts of the command string;

associating each individual object-based command with at least one execution element;

wherein the at least one execution element comprises one selected from a group consisting of: a cmdlet, a function, a filter, an external script and an external executable;

executing each execution element associated with each individual object-based command to produce output objects, wherein the execution of each execution element is execution dependent upon an execution-supporting operating environment;

resolving a parameter of each individual object-based command ~~[[in]]~~constituent to the sequence of object-based commands to a data type; ~~[[and]]~~

wherein a particular parameter of each individual object-based command is provided within an input object responsive to a property declared within an

executable element class of the executable element associated with the individual object-based command comprising at least a name and data type,

for when data types of parameters of individual object-based commands that are not natively supported by the operating environment, retrieving extended information comprising extended metadata and code, the extended metadata describing the data type and the code comprising additional instructions to populate an instance of the data type, that defines the data types and creating [[an]] the instance of the data types for the parameter of each object-based command in the sequence that was resolved to one of the data types[.];

when data types of parameters of individual object-based commands are different than the data type specified by the property declared within the executable element class of the executable element associated with the individual object-based command, retrieving extended information comprising extended metadata and code, the extended metadata describing the data type and the code comprising additional instructions to populate the instance of the data type, that defines the data types and creating the instance of the data types for the parameter of each object-based command in the sequence that was resolved to one of the data types; and

wherein the retrieving extended information comprises the use of at least one of a property path mechanism, a key mechanism, a compare mechanism, a conversion mechanism, a globber mechanism, a relationship mechanism, and a property set mechanism.

**2. (Previously Presented)** The computer storage medium of claim 1, wherein the executing comprises processing each execution element in order of each execution element's associated individual object-based commands in the sequence of object-based commands.

**3. (Previously Presented)** The computer storage medium of claim 2, wherein the executing further comprises inputting into one or more execution elements output objects produced from one or more previously processed execution elements.

**4. (Canceled)**

**5. (Previously Presented)** The computer storage medium of claim 1, further comprising:

receiving the sequence of object-based commands via an object-based command pipeline, wherein the sequence of object-based commands includes a wildcard; and

producing a subset of the sequence of object-based commands based on the wildcard.

**6. (Previously Presented)** The computer storage medium of claim 1, further comprising:

receiving the sequence of object-based commands via an object-based command pipeline, wherein the sequence of object-based commands includes a property set; and

identifying a plurality of properties associated with the property set and processing the sequence of object-based commands based on the plurality of properties.

**7. (Previously Presented)** The computer storage medium of claim 1, further comprising:

receiving the sequence of object-based commands via an object-based command pipeline, wherein the sequence of object-based commands includes a relation; and

finding items that the sequence of object-based commands consume based on the relation.

**8. (Previously Presented)** The computer storage medium of claim 1, further comprising receiving the sequence of object-based commands via an object-based command pipeline, wherein the sequence of object-based commands comprises a property path, the property path comprises a series of components that provide navigation to a desired property of each object-based command in the sequence.

**9. (Previously Presented)** The computer storage medium of claim 2, wherein the sequence of object-based commands is associated with a first data type and the processing further comprising looking up a conversion that converts the first data type to the data type.

**10. (Previously Presented)** The computer storage medium of claim 8, wherein each component comprises a property of each object-based command in the sequence, a method of each object-based command in the sequence, a field of each object-based command in the sequence, a third party property, or a third party object method.

**11. (Previously Presented)** The computer storage medium of claim 1, wherein the sequence of object-based commands is received as input to a subsequent command in the object-based command pipeline after processing the sequence of object-based commands

**12. (Canceled)**

**13. (Previously Presented)** The computer storage medium of claim 8, wherein a component comprises a reference to registered code.

**14. (Currently Amended)** A computer storage medium ~~for facilitating resolution of partially unresolved input, the medium~~ having computer executable instructions

encoded thereon, which when executed by a computer perform operations facilitating resolution of partially unresolved input comprising:

receiving one or more parseable input objects, the input objects being output from an already processed execution element that is associated with one or more object-based commands of a sequence of commands obtained via an object-based command pipeline within an execution-supporting operating environment,

wherein the one or more parseable input objects include[[ing]] content that uses a data type that is not natively supported by the execution-supporting operating environment or is different than a data type expected due to a property declared within an executable element class of the executable element associated with the one or more object-based commands comprising at least a name and data type,

wherein the sequence of commands comprise a command string and the one or more object-based commands comprise respective constituent parts of the command string, and

wherein the execution of an execution element is execution dependent upon the execution-supporting operating environment to actually execute;  
retrieving extended information comprising extended metadata and code that defines the data type,[[; and]]

wherein the extended metadata describes the data type and the code comprises additional instructions to populate an instance of the data type; and  
creating [[an]] the instance of the data type,

wherein the receiving, retrieving, and creating acts facilitate resolution of partially unresolved input.

**15. (Previously Presented)** The computer storage medium of claim 14, wherein the one or more parseable input objects comprises a Windows Management Instrumentation (WMI) input, an ActiveX Data Object (ADO) input, an XML input, or a third party data format.

**16. (Canceled)**

**17. (Previously Presented)** The computer storage medium of claim 14, wherein the one or more parseable input objects comprises a third party object that provides an additional property to an object supported natively within the execution-supporting operating environment.

**18. (Previously Presented)** The computer storage medium of claim 14, wherein the one or more parseable input objects comprises an ontology service.

**19. (Currently Amended)** A computer system that extends data types available to an operating environment, the system comprising:

a processor; and

a memory, the memory being allocated for a plurality of computer-executable instructions which are loaded into the memory and are executable by the processor to perform operations, comprising:

parsing a sequence of object-based commands into individual object-based commands;

associating each individual object-based command with at least one execution element;

executing each execution element associated with each individual object-based command to produce output objects, wherein the execution of each execution element is execution dependent upon an execution-supporting operating environment;

resolving a parameter of each individual object-based command in the sequence of object-based commands to a data type[[: and]].

wherein a particular parameter of each individual object-based command is provided within an input object responsive to a property declared within an executable element class of the executable element associated with the individual object-based command comprising at least a name and data type,

[[for]] when data types of parameters of individual object-based commands that are not natively supported by the operating environment, retrieving extended information comprising extended metadata and code, the extended metadata describing the data type and the code comprising additional instructions to populate an instance of



the data type, that defines the data types and creating [[an]] the instance of the data types for each individual object-based command in the sequence that was resolved to one of the data types[[]]; and

when data types of parameters of individual object-based commands are different than the data type specified by the property declared within the executable element class of the executable element associated with the individual object-based command, retrieving extended information comprising extended metadata and code, the extended metadata describing the data type and the code comprising additional instructions to populate the instance of the data type, that defines the data types and creating the instance of the data types for the parameter of each object-based command in the sequence that was resolved to one of the data types.

**20. (Previously Presented)** The system of claim 19, wherein the executing comprises processing each execution element in order of each execution element's associated individual object-based commands in the sequence of object-based commands.

**21. (Previously Presented)** The system of claim 20, wherein the executing further comprises inputting into one or more execution elements output objects produced from one or more previously processed execution elements.

**22. (Canceled)**

**23. (Previously Presented)** The system of claim 20, wherein the sequence of object-based commands is associated with a first data type and the processing further comprising looking up a conversion that converts the first data type to the data type.